



## Department of Energy

Office of Science  
Integrated Support Center

9800 South Cass Avenue  
Lemont, IL 60439

P.O. Box 2001  
Oak Ridge, Tennessee 37831

March 11, 2019

[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Dear Mr. Pfeiffer:

### FREEDOM OF INFORMATION ACT REQUEST ORO-2019-00475-F

This letter and the enclosures complete our response to your Freedom of Information Act (FOIA) request for copies of "at least 20 color photographs of Plutonium Tetrafluoride (PuF<sub>4</sub>) in which the pinkish/reddish color of PuF<sub>4</sub> (sometimes referred to as 'pink cake') is clearly visible. Please include the date and location of which such pictures were taken when available. You may restrict your search to, when relevant, records produced or held by the Hanford Site, Hanford Project, Hanford Engineer Works, Hanford Nuclear Reservation, Pacific Northwest Laboratory, Pacific Northwest National Laboratory, Richland Office of DOE, and their predecessor or successor agencies." Your request was transferred to the U.S. Department of Energy (DOE) Oak Ridge Office (ORO) from the DOE Richland Operations Office for a search to be conducted at the Pacific Northwest National Laboratory (PNNL) which is under the jurisdiction of DOE-ORO.

In response to your request, enclosed are all of the photographs from PNNL that could be located.

This decision, as well as the adequacy of the search, may be appealed within 90 calendar days from your receipt of this letter pursuant to 10 C.F.R. § 1004.8. Appeals should be addressed to: Director, Office of Hearings and Appeals, U.S. Department of Energy, L'Enfant Plaza, 1000 Independence Avenue, S.W., Washington, D.C. 20585-1615. The written appeal, including the envelope, must clearly indicate that a FOIA appeal is being made. The appeal must contain all of the elements required by 10 C.F.R. § 1004.8, including a copy of this determination letter. Thereafter, judicial review will be available to you in the Federal District Court either: (1) in the district where you reside; (2) where you have your principal place of business; (3) where DOE's records are situated; or (4) in the District of Columbia.

**FREEDOM OF INFORMATION ACT REQUEST ORO-2019-00475-F**

You may contact DOE ORO's Freedom of Information Act Public Liaison, Ms. DiAnn Fields-Gilbert, Public Affairs Office, at (865) 574-3612 or by writing to the address on the top of this letter for further assistance and to discuss any aspect of your request. Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services they offer. The contact information for OGIS is as follows: Office of Government Information Services, National Archives and Records Administration, 8601 Adelphi Road-OGIS, College Park, Maryland 20740-6001; e-mail at [ogis@nara.gov](mailto:ogis@nara.gov); telephone at (202) 741-5770 or toll free at 1 (877) 684-6448; or facsimile at (202) 741-5769.

If you have any questions about the processing of your request or this letter, you may contact me by telephone at (865) 576-2129, by e-mail at [Linda.Chapman@Science.Doe.Gov](mailto:Linda.Chapman@Science.Doe.Gov), or by writing to the address on the top of this letter. I appreciate the opportunity to assist you with this matter. There is no charge for processing this request.

Sincerely,

  
Linda G. Chapman  
Authorizing Official

Enclosures

$\text{PuF}_4$   
5-10

100%  $\text{PuF}_4$

2.5YR 8/4



$\text{PuF}_4$



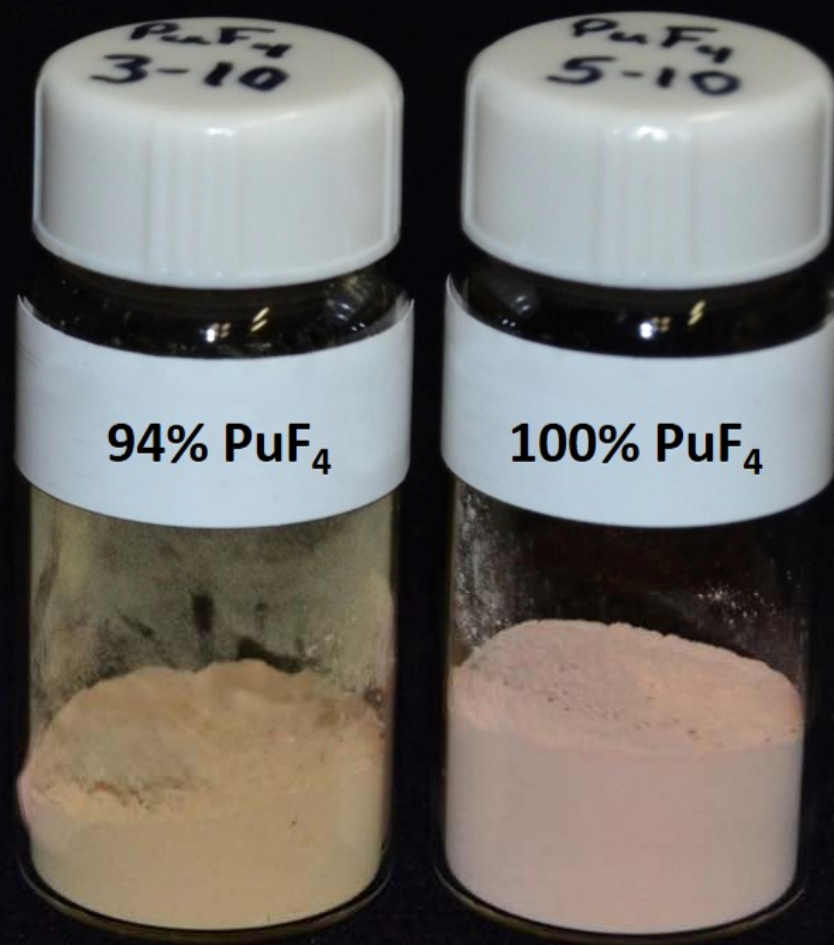




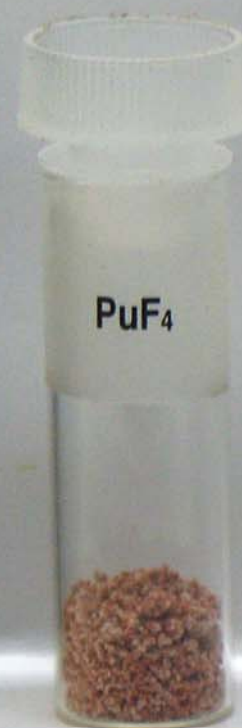
PH 5142 F140 R15



2.5YR 8/4





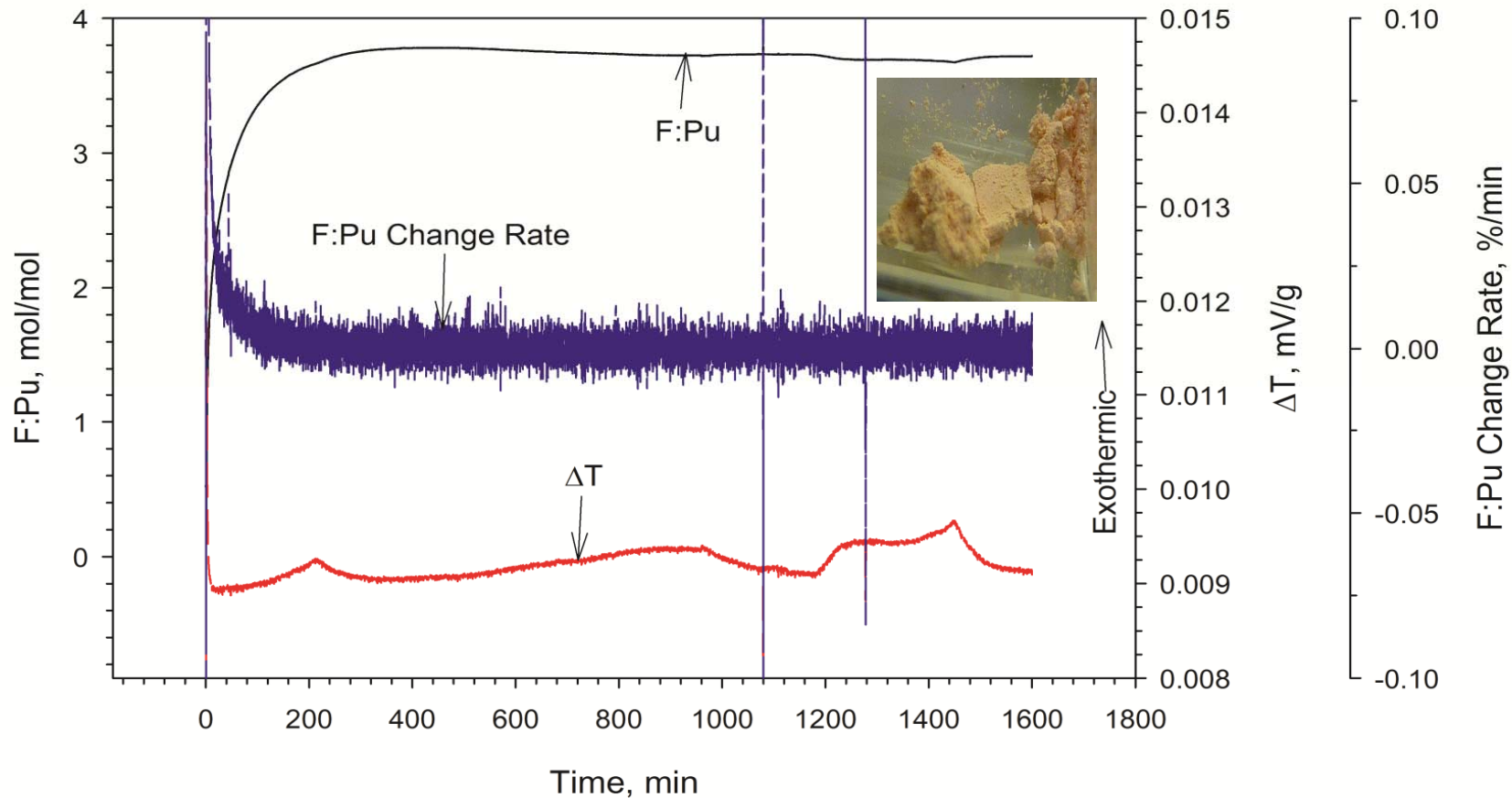




U.S. DEPARTMENT OF  
**ENERGY**

Nuclear Energy

## Isothermal Reaction of $\text{PuO}_2$ with 10% $\text{NF}_3$ at $450^\circ\text{C}$



*$\text{NF}_3$  converts  $\text{PuO}_2$  to non-volatile  $\text{PuF}_4$*

**From:** [Cooke, Steven D](#)  
**To:** [Chesman, Linda G](#); [Biehle, Dorothy C \(DOR\)](#)  
**Cc:** [Brown, Andrea M](#)  
**Subject:** FW: FOI 2019-00371  
**Date:** Monday, February 18, 2019 12:20:57 PM  
**Attachments:** [image005.png](#)  
[image006.png](#)

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This may also be useful; I defer to you.

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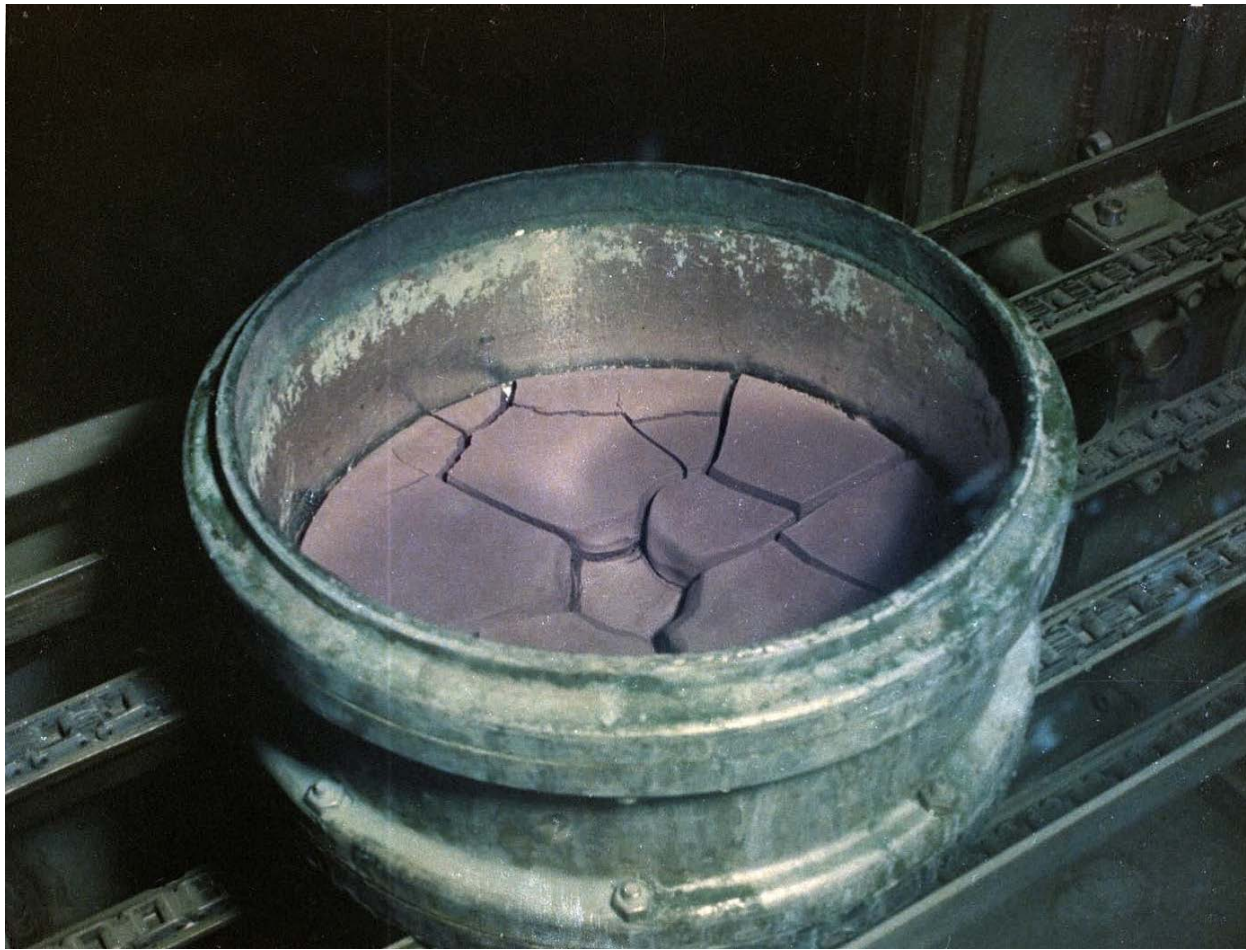
**Steven Cooke**

Assistant General Counsel  
Pacific Northwest National Laboratory  
509-375-2891  
[steven.cooke@pnnl.gov](mailto:steven.cooke@pnnl.gov)

From a researcher .....

These photos originally came to us from SRNL. The first photo is Pu tetrafluoride (brownish) and the second is Pu trifluoride cake which is pink. The FOIA request was asking for pink cake PuF<sub>4</sub>, but the only pink photos I have are of PuF<sub>3</sub>. Pu compounds come in all kinds of colors, pretty remarkable actually, but I have not seen any pink Pu tetrafluoride photos.





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**From:** Riehle, Dorothy C [<mailto:dorothy.riehle@rl.doe.gov>]  
**Sent:** Thursday, January 24, 2019 2:07 PM  
**To:** Cooke, Steven D <[Steven.Cooke@pnnl.gov](mailto:Steven.Cooke@pnnl.gov)>  
**Cc:** 'Linda.Chapman@Science.doe.gov' <[Linda.Chapman@Science.doe.gov](mailto:Linda.Chapman@Science.doe.gov)>  
**Subject:** FOI 2019-00371

Hi Steve,

Richland received the attached request for colored photos and during my search I was told that RL may of sent samples over to PNNL and perhaps PNNL took photos. Is there a way you could check? I wasn't sure if PNNL had a central location where photos were maintained or if there would be a particular office that would know if PNNL had such photos.

Thanks,

Dorothy Riehle  
DOE RL/ORP FOIA and Privacy Act Officer  
PO Box 550, Mail Stop HS-20  
Richland, WA 99352  
(509) 376-6288

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